

SEQUENCE LISTING

<110> Fisher, Paul B.

<120> Genes Displaying Enhanced Expression During
Cellular Senescence and Terminal Cell
Differentiation and Uses Thereof

<130> 0575/56765

<140> WIPO ST. 10/C

<141> 1999-02-03

<160> 50

<170> PatentIn Ver. 2.0

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<212> DNA
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<212> DNA

<213> Homo sapien

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<210> 6

<211> 445

<212> DNA

<213> Homo sapien

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<211> 666

<212> DNA

<213> Homo sapien

<400> 7

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<210> 8

<211> 409

<212> DNA

<213> Homo sapien

<400> 8

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<210> 9

<211> 667

<212> DNA

<213> Homo sapien

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<211> 672

<212> DNA

<213> Homo sapien

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672

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<211> 672

<212> DNA

<213> Homo sapien

<400> 11

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672

<210> 12

<211> 669

<212> DNA

<213> Homo sapien

<400> 12

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669

<210> 13

<211> 702

<212> DNA

<213> Homo sapien

<400> 13

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<212> DNA
<213> Homo sapien

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<210> 15
<211> 391
<212> DNA
<213> *Homo sapien*

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<210> 16
<211> 720
<212> DNA
<213> Homo sapien

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<210> 17

<211> 205

<212> DNA

<213> Homo sapien

<400> 17

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cagcattccc cctcaaacctt aaaaaaaaaa aaaaaaaaaa nnngggggggg cccgggncccc 180
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<210> 18

<211> 691

<212> DNA

<213> Homo sapien

<400> 18

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cgaatgggtc cattctctt ccggactttt t 691

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<211> 483

<212> DNA

<213> Homo sapien

<400> 19

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<210> 20
<211> 589
<212> DNA
<213> Homo sapien

<400> 20
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<211> 713
<212> DNA
<213> Homo sapien

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<210> 22
<211> 480
<212> DNA
<213> Homo sapien

<400> 22
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<210> 23
<211> 198
<212> DNA
<213> Homo sapien

<400> 23
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tctttgttta acaaaccatg catttaagtt taagtgaagt caacaaaaag gaaataggtg 120
tatggatatg tgattttgag attaaagttt gtcttaaaaat gtaaaaaaaaaaaaaaa 180
aaaaaaaaaaa aaaaaaaaaa 198

<210> 24
<211> 414
<212> DNA
<213> Homo sapien

<400> 24
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attgttcgtt attgctcaga aaattcaaac acgcaaagat cttatggata aaactcagaa 120
agtgaagggtg aagaaagaaa cggtaactc cccagctatt tataaatttc agagtcgtcg 180
aaaacgttga cgtgttatag ataagccttg tcattctgtta tcaaaaatct gttgtcggtt 240
tctagtaact tcaaattcca ttactccaaa tggcatggtt ttccggtttg taaccataac 300
taaattgtca gtctgacatt taatgtctt ctatggacaa cattaaatct ccctcccttc 360
tgtagaanan anannnnnaaa aaneencceng gggggggccc ggtccccatt cccc 414

<210> 25
<211> 367
<212> DNA
<213> Homo sapien

<400> 25
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attgttcgtt attgctcaga aaattcaaac acgcaaagat cttatggata aaactcagaa 120
agtgaagggtg aagaaagaaa cggtaactc cccagctatt tataaatttc agagtcgtcg 180
aaaacgttga cgtgttatag ataagccttg tcattctgtta tcaaaaatct gttgtcggtt 240
tctagtaact tcaaattcca ttactccaaa tggcatggtt ttccggtttg taaccataac 300
taaattgtca gtctgacatt taatgtctt ctatggacaa acattaaatc ccctcccttc 360
ctgtaaa 367

<210> 26
<211> 432
<212> DNA
<213> Homo sapien

<400> 26
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gctgactgga gtatcttcaa gtacaaatcc cttcagaccc cagaaagtct gttccctttt 120
gtagtaaaat gaatcttca aaggtttccc aaaccactcc ttatgatcca gtgaatattc 180
aagagagcta catttgaagc ctgtacaaaaa gcttataccct gtaacacatg tgccataata 240
tacaaaacttc tacttctgac agtccttaac atctacctct ctgaattttc atgaatttct 300
atttcacaag ggtaattgtt ttatatacac tggcagcagc atacaataaa acttagtatg 360
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gggngnccgn tt 432

<210> 27
<211> 398
<212> DNA
<213> Homo sapien

<400> 27
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acggcaaaaaa acccttcagt cagcacgtga gaaaactgctg agccagcatt accccccggga 180
ccattctgat catcctcaact ggacgccaca gggcaagag ggtggtttcc ctgaagcagc 240
tggctagtgg cttattactt gtgactggac ctctggtcct caatcgantt cctctacnaa 300
gaacacaccca gaaatttgcattt attgccactt caacccaaat cgatntcngc antgtannaa 360
atcccaanac atcttactga tgcttacttc aagatgaa 398

<210> 28
<211> 232
<212> DNA
<213> Homo sapien

<400> 28
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ctgctgtgat actgagttt ctaaacagca taaggaagac ttgctccct gtcctatgaa 120
agagaatagt tttggagggg agaagtggga caaaaaagat gcagtttcc tttgtattgg 180
gaaaatgtgaa aataaaatttgcattt caaaaaaaaaaa aaaaaaaaaaa aa 232

<210> 29
<211> 539
<212> DNA
<213> Homo sapien

<400> 29
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cagcaggctt accaggaagc atttgaaatt agtaagaaag aaatgcagcc tacacaccca 180
attcgcttg gtctggcact aaatttctca gtctttact atgagattct aaactctcct 240
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ctgaatgaag agtcttataa agacagcact ctgatcatgc agttacttag ggacaattca 360
ctctgtggac atcggaaaaac cagggagacg aaggagacgc tggggaggga gagaactaat 420
gtttctcgatc ctttgtgatc tgttcagtgt cactctgtac cctcaacata tatcccttgt 480
gcgataaaaaa aaaanaaaaa aaaaaccntc ngggggggccc ccggancnn attccccct 539

<210> 30
<211> 568
<212> DNA
<213> Homo sapien

<400> 30
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tttacatttg ttcttctagg gaatgtatgc atctctataat atatttccc tctcaaaacc 120
agaacatcaa cagtgtgtt tctgacactt cagacatccc acgcaagcc acattgaatt 180
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<210> 31
<211> 315
<212> DNA
<213> Homo sapien

<220>
<223> Human sapien

<400> 31
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ttgccgcctg agagccccag gagacatcggtt ctagagtac catggctatg cttccgtctg 180
gaagatgcca gcacatctggcc tcccactgtt tttagtgcgtg tccccagtc cgtgtcttt 240
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aaaaaaaaaa aaaaa 315

<210> 32
<211> 458
<212> DNA
<213> Homo sapien

<400> 32

aattcaagga actttacatt gtaagagaaa acaaaacact gcaaaagaag tggccgact 60
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acaaaaggctt agattgcct tgtctaaaa taaggaattt ttagtggtt ttcaaaaata 180
attcaacaaa gaaacaatac aaaaagtggg tagaattacc tattcacattt cccaatctt 240
actattcaga atgctgtta ttttagtgatg aggattagca cttgattgaa gattctttt 300
aaataactatc agttaaacat ttaatatgtat tatgattaat gnattcatta tgctncagac 360
tgacntanga atcantaaaa ngatngttt actctgcaaa aaaaaaaaaa aacncggggg 420
ggggccccggc cccaaatttcc cttntgggg gggggttt 458

<210> 33

<211> 470

<212> DNA

<213> Homo sapien

<400> 33

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gaccgagtct tgggttttag cctaagagaa gattatgtt gtaatttctt ctcaggtatg 180
gaaccacggc cataactaac atgtggcca gaatagaacc actggtaaa catatttat 240
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tttcttgtaa actatactcc tggtaatg ttaaactttt tgcttaaagt ttaatttaa 360
gatgtttgaa tgttcagttt atgtatttga actacaataa accaaccctt ttatataaa 420
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<210> 34

<211> 261

<212> DNA

<213> Homo sapien

<400> 34

aattcgaact gtgtgtatgt cagtggaaatc aaatcaaaag ccactaacat ggctgtctgt 60
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atttctcagt gtttgcattt cagactgtct aaatacagca tgtgacaagc tgaagaagcc 180
aaatctagca gtcatttctg atttcattat attctcccc tcttcctgct aaaaagacaa 240
aaaacaaaaaa aaaaaaaaaa a 261

<210> 35

<211> 309

<212> DNA

<213> Homo sapien

<400> 35

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gaagcggacc tgaggacccc ttggccctgg cttcaaaacc cacccttcc cttccagcc 180
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aaaaaaaaa 309

<210> 36
<211> 243
<212> DNA
<213> Homo sapien

<400> 36
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tgcctcgct gcagttccc ttgggttcca tgtttccct gttccctccc atgccttagct 180
ggattgcaga gttaagttt tgattatgaa ataaaaacta aataacaaaa aaaaaaaaaa 240
aaa 243

<210> 37
<211> 650
<212> DNA
<213> Homo sapien

<400> 37
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tcttggatgg ccaagtagtg taattgaaat cttgtctgg tcacacagtt taattctatt 420
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catgataaaa aatttaggggg gataaataaa aatggttact ggaatttcaa 650

<210> 38
<211> 687
<212> DNA
<213> Homo sapien

<400> 38
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agcgttcaag tttgttattaa aggaaaggat tagttgacc ctttctttt atggtaatg 360
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tttcccccn aaaaaaaaaatc ccntaanntt tttaattnt tgaattnaan annaantaa 600
ccttttnaa aaccnngcaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 660

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687

<210> 39

<211> 2549

<212> DNA

<213> Homo sapien

<400> 39

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ttaaaagtaa gtcattata catcttaga 2549

<210> 40
<211> 649
<212> DNA
<213> Homo sapien

<400> 40
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<210> 41
<211> 638
<212> DNA
<213> mouse

<400> 41
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caaacatgac tgcagtgtcg ctgcataatt cacaacttga ccaacgaaag attaaacatc 540
ccactgcctt aggacttagag gtggccaaga aattcaggtc aaatactttg gccgtgatcc 600
agctgtatggc agaatgagge ttctcgtaa agtacttc 638

<210> 42
<211> 705
<212> PRT
<213> Homo sapien

<400> 42
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Asp	Leu	Gly	Asn	Arg	Lys	Leu	Glu	Ile	Ser	Ser	Gly	Lys	Leu	Ala	Arg
								35		40				45	
Phe	Ala	Asp	Gly	Ser	Ala	Val	Val	Gln	Ser	Gly	Asp	Thr	Ala	Val	Met
								50		55				60	
Val	Thr	Ala	Val	Ser	Lys	Thr	Lys	Pro	Ser	Pro	Ser	Gln	Phe	Met	Pro
						65		70				75			80
Leu	Val	Val	Asp	Tyr	Arg	Gln	Lys	Ala	Ala	Ala	Gly	Arg	Ile	Pro	
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Thr	Asn	Tyr	Leu	Arg	Arg	Glu	Val	Gly	Thr	Ser	Asp	Lys	Glu	Ile	Leu
						100			105					110	
Thr	Ser	Arg	Ile	Ile	Asp	Arg	Ser	Ile	Arg	Pro	Leu	Phe	Pro	Ala	Gly
						115		120				125			
Tyr	Phe	Tyr	Asp	Thr	Gln	Val	Leu	Cys	Asn	Leu	Leu	Ala	Val	Asp	Gly
						130		135				140			
Val	Asn	Glu	Pro	Asp	Val	Leu	Ala	Ile	Asn	Gly	Ala	Ser	Val	Ala	Leu
						145		150			155			160	
Ser	Leu	Ser	Asp	Ile	Pro	Trp	Asn	Gly	Pro	Val	Gly	Ala	Val	Arg	Ile
						165			170				175		
Gly	Ile	Ile	Asp	Gly	Glu	Tyr	Val	Val	Asn	Pro	Thr	Arg	Lys	Glu	Met
						180			185			190			
Ser	Ser	Ser	Thr	Leu	Asn	Leu	Val	Val	Ala	Gly	Ala	Pro	Lys	Ser	Gln
						195		200			205				
Ile	Val	Met	Leu	Glu	Ala	Ser	Ala	Glu	Asn	Ile	Leu	Gln	Gln	Asp	Phe
						210		215			220				
Cys	His	Ala	Ile	Lys	Val	Gly	Val	Lys	Tyr	Thr	Gln	Gln	Ile	Ile	Gln
						225		230			235			240	
Gly	Ile	Gln	Gln	Leu	Val	Lys	Glu	Thr	Gly	Val	Thr	Lys	Arg	Thr	Pro
						245			250			255			
Gln	Lys	Leu	Phe	Thr	Pro	Ser	Pro	Glu	Ile	Val	Lys	Tyr	Thr	His	Lys
						260			265			270			

Leu Ala Met Glu Arg Leu Tyr Ala Val Phe Thr Asp Tyr Glu His Asp
275 280 285

Lys Val Ser Arg Asp Glu Ala Val Asn Lys Ile Arg Leu Asp Thr Glu
290 295 300

Glu Gln Leu Lys Glu Lys Phe Pro Glu Ala Asp Pro Tyr Glu Ile Ile
305 310 315 320

Glu Ser Phe Asn Val Val Ala Lys Glu Val Phe Arg Ser Ile Val Leu
325 330 335

Asn Glu Tyr Lys Arg Cys Asp Gly Arg Asp Leu Thr Ser Leu Arg Asn
340 345 350

Val Ser Cys Glu Val Asp Met Phe Lys Thr Leu His Gly Ser Ala Leu
355 360 365

Phe Gln Arg Gly Gln Thr Gln Val Leu Cys Thr Val Thr Phe Asp Ser
370 375 380

Leu Glu Ser Gly Ile Lys Ser Asp Gln Val Ile Thr Ala Ile Asn Gly
385 390 395 400

Ile Lys Asp Lys Asn Phe Met Leu His Tyr Glu Phe Pro Pro Tyr Ala
405 410 415

Thr Asn Glu Ile Gly Lys Val Thr Gly Leu Asn Arg Arg Glu Leu Gly
420 425 430

His Gly Ala Leu Ala Glu Lys Ala Leu Tyr Pro Val Ile Pro Arg Asp
435 440 445

Phe Pro Phe Thr Ile Arg Val Thr Ser Glu Val Leu Glu Ser Asn Gly
450 455 460

Ser Ser Ser Met Ala Ser Ala Cys Gly Gly Ser Leu Ala Leu Met Asp
465 470 475 480

Ser Gly Val Pro Ile Ser Ser Ala Val Ala Gly Val Ala Ile Gly Leu
485 490 495

Val Thr Lys Thr Asp Pro Glu Lys Gly Glu Ile Glu Asp Tyr Arg Leu
500 505 510

Leu Thr Asp Ile Leu Gly Ile Glu Asp Tyr Asn Gly Asp Met Asp Ph
515 520 525

Lys Ile Ala Gly Thr Asn Lys Gly Ile Thr Ala Leu Gln Ala Asp Ile
530 535 540

Lys Leu Pro Gly Ile Pro Ile Lys Ile Val Met Glu Ala Ile Gln Gln
545 550 555 560

Ala Ser Val Ala Lys Lys Glu Ile Leu Gln Ile Met Asn Lys Thr Ile
565 570 575

Ser Lys Pro Arg Ala Ser Arg Lys Glu Asn Gly Pro Val Val Glu Thr
580 585 590

Val Gln Val Pro Leu Ser Lys Arg Ala Lys Phe Val Gly Pro Gly Gly
595 600 605

Tyr Asn Leu Lys Lys Leu Gln Ala Glu Thr Gly Val Thr Ile Ser Gln
610 615 620

Val Asp Glu Glu Thr Phe Ser Val Phe Ala Pro Thr Pro Ser Val Met
625 630 635 640

His Glu Ala Arg Asp Phe Ile Thr Glu Ile Cys Lys Asp Asp Gln Glu
645 650 655

Gln Gln Leu Glu Phe Gly Ala Val Tyr Thr Ala Thr Ile Thr Glu Ile
660 665 670

Arg Asp Thr Gly Val Met Val Lys Leu Tyr Pro Asn Met Thr Ala Val
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Leu Leu His Asn Thr Gln Leu Asp Asn Glu Arg Leu Asn Ile Leu Leu
690 695 700

Pro
705

<210> 43
<211> 665
<212> PRT
<213> Homo sapien

<400> 43
Met Gly Gln Glu Lys His Val Phe Thr Ile Asp Trp Ala Gly Arg Thr
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Leu Thr Leu Thr Val Asn Tyr Glu Glu Arg Leu Tyr Ala Val Gly Lys

Glu Lys Val Arg Pro Asp Glu Arg Glu Val Asp Glu Ile Arg Pro Leu

Ile Leu Ser Lys Leu Val Lys Asn Glu Val Arg Leu Ile Thr Glu
260 265 270

Phe Glu Asp Glu Glu His Asp Glu Asp Thr Ile Lys Glu Val Lys Glu
245 250 255

Ala Arg Glu Asp Ala Ile Asn Glu Val Lys Asn Ala Val Val Ala Lys
225 230 235 240

Leu Ala Glu Glu Asp Leu Leu Lys Ala Ile Glu Val His Glu Lys His
210 215 220

Ile Lys Leu Phe Glu Ile Asp Glu Glu Leu Asn Glu Lys Val Lys Ala
195 200 205

Ala Phe Glu Glu Glu Ile Val Ala Ala Val Glu Lys Glu Lys Ser Glu
180 185 190

Met Leu Glu Ala Ile Met Phe Glu His Glu Glu Ile Lys Arg Leu Ile
165 170 175

Ala Ile Asn Met Val Glu Ala Glu Ala Asp Glu Val Pro Glu Glu Ile
145 150 155 160

Gln Leu Glu Lys Ser Asp Ile Asn Leu Val Ala Glu Thr Lys Asp
130 135 140

Thr Val Glu Arg Ile Asp Asp Glu Phe Ile Ile Asn Pro Thr Val Asp
115 120 125

Ala Leu Ser Val Ser Asp Ile Pro Phe Glu Glu Pro Ile Ala Glu Val
100 105 110

Asp Glu Asn Cys Ser Ser Glu Met Ala Met Phe Glu Ser Ser Leu
95 90 95

Asp Glu Phe Arg Asn Glu Val Glu Val Ile Ser Ile Val Met Ser Val
65 70 75 80

Val Leu Ala Ser Arg Leu Ile Asp Arg Pro Ile Arg Pro Leu Phe Ala
50 55 60

Ile Pro Glu Glu Phe Ile Lys Arg Glu Glu Arg Pro Ser Glu Lys Ala
35 40 45

Val 11 Gly Pro Ser Gly Lys Glu Ile Asn Lys Ile Glu Glu Thr
 Ala Pro Lys Ile Leu Thr Met Thr Ile Asn Pro Asp Lys Ile Arg Asp
 Ser Met Leu Ala Thr Leu Ser Glu Ser Arg Lys Glu Leu Ser Arg Tyr
 Glu Ala Leu Glu Ala Lys Gly Arg Met Glu Ile Leu Asn
 Ala Leu Glu Met Asp Ile Lys Ile Glu Gly Leu Ser Arg Glu Ile Leu
 Leu Gly Asp Met Asp Phe Lys Val Ala Gly Met Glu Ile Val Thr
 Gly Glu His Tyr Thr Val Leu Thr Asp Ile Glu Gly Met Glu Asp Ala
 Pro Ile Lys Ala Pro Val Ala Gly Ile Ala Met Gly Leu Val Lys Ser
 Glu Ala Ser Ile Cys Ala Ser Thr Leu Ala Met Met Asp Ala Gly Val
 Thr Val Arg Leu Val Ser Glu Val Leu Glu Ser Asn Gly Ser Thr Ser
 Glu Arg Ala Leu Glu Pro Val Ile Pro Ser Glu Lys Asp Phe Pro Tyr
 Pro Met Arg Gly Pro Gly Arg Arg Glu Ile Gly His Gly Ala Leu Gly
 Phe Met His His Tyr Asn Phe Pro Glu Phe Ser Val Gly Glu Thr Gly
 Gly Asp Val Glu Ile Leu Asp Gly Leu Gly Val Glu Ser Lys Arg
 Thr Arg Gly Glu Thr Glu Ala Leu Ser Val Cys Thr Leu Gly Ala Leu
 Ser Ser Glu Val Gly Leu Leu Pro Arg Thr His Gly Ser Gly Leu Phe
 290 295 300
 305 310 315
 320 325 330
 335 340 345
 355 360 365
 370 375 380
 385 390 395
 400 405 410
 415 420 425
 430 435 440
 445 450 455
 460 465 470
 475 480 485
 490 495 500
 505 510 515
 520 525 525
 530 535 540
 545 550 555
 560 565 570
 575 580 585
 590 595 600
 605 610 615
 620 625 630
 635 640 645
 650 655 660
 665 670 675
 680 685 690
 695 700 705
 710 715 720
 725 730 735
 740 745 750
 755 760 765
 770 775 780
 785 790 795
 800 805 810
 815 820 825
 830 835 840
 845 850 855
 860 865 870
 875 880 885
 890 895 900
 905 910 915
 920 925 930
 935 940 945
 950 955 960
 965 970 975
 980 985 990
 995 1000 1005

530

535

540

Gly Val Lys Ile Asp Ile Glu Gln Asp Gly Thr Ile Phe Ile Ser Ser
545 550 555 560

Thr Asp Glu Ser Gly Asn Gln Lys Ala Lys Lys Ile Ile Glu Asp Leu
565 570 575

Val Arg Glu Val Glu Val Gly Gln Leu Tyr Leu Gly Lys Val Lys Arg
580 585 590

Ile Glu Lys Phe Gly Ala Phe Val Glu Ile Phe Ser Gly Lys Asp Gly
595 600 605

Leu Val His Ile Ser Glu Leu Ala Leu Glu Arg Val Gly Lys Val Glu
610 615 620

Asp Val Val Lys Ile Gly Asp Glu Ile Leu Val Lys Val Thr Glu Ile
625 630 635 640

Asp Lys Gln Gly Arg Val Asn Leu Ser Arg Lys Ala Val Leu Arg Glu
645 650 655

Glu Lys Glu Lys Glu Glu Gln Gln Ser
660 665

<210> 44

<211> 704

<212> PRT

<213> Homo sapien

<400> 44

Asp Gly Pro Phe Leu Leu Pro Arg Arg Asp Arg Ala Leu Thr Gln Leu
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Gln Val Arg Ala Leu Trp Ser Ser Ala Gly Ser Arg Ala Val Ala Val
20 25 30

Asp Leu Gly Asn Arg Lys Leu Glu Ile Ser Ser Gly Lys Leu Ala Arg
35 40 45

Phe Ala Asp Gly Ser Ala Val Val Gln Ser Gly Asp Thr Ala Val Met
50 55 60

Val Thr Ala Val Ser Lys Thr Lys Pro Ser Pro Ser Gln Phe Met Pro
65 70 75 80

Leu Val Val Asp Tyr Arg Gln Lys Ala Ala Ala Ala Gly Arg Ile Pro
 85 90 95

 Thr Asn Tyr Leu Arg Arg Glu Val Gly Thr Ser Asp Lys Glu Ile Leu
 100 105 110

 Thr Ser Arg Ile Ile Asp Arg Ser Ile Arg Pro Leu Phe Pro Ala Gly
 115 120 125

 Tyr Phe Tyr Asp Thr Gln Val Leu Cys Asn Leu Leu Ala Val Asp Gly
 130 135 140

 Val Asn Glu Pro Asp Val Leu Ala Ile Asn Gly Ala Ser Val Ala Leu
 145 150 155 160

 Ser Leu Ser Asp Ile Pro Trp Asn Gly Pro Val Gly Val Arg Ile Gly
 165 170 175

 Ile Ile Asp Gly Glu Tyr Val Val Asn Pro Thr Arg Lys Glu Met Ser
 180 185 190

 Ser Ser Thr Leu Asn Leu Val Val Ala Gly Ala Pro Lys Ser Gln Ile
 195 200 205

 Val Met Leu Glu Ala Ser Ala Glu Asn Ile Leu Gln Gln Asp Phe Cys
 210 215 220

 His Ala Ile Lys Val Gly Val Lys Tyr Thr Gln Gln Ile Ile Gln Gly
 225 230 235 240

 Ile Gln Gln Leu Val Lys Glu Thr Gly Val Thr Lys Arg Thr Pro Gln
 245 250 255

 Lys Leu Phe Thr Pro Ser Pro Glu Ile Val Lys Tyr Thr His Lys Leu
 260 265 270

 Ala Met Glu Arg Leu Tyr Ala Val Phe Thr Asp Tyr Glu His Asp Lys
 275 280 285

 Val Ser Arg Asp Glu Ala Val Asn Lys Ile Arg Leu Asp Thr Glu Glu
 290 295 300

 Gln Leu Lys Glu Lys Phe Pro Glu Ala Asp Pro Tyr Glu Ile Ile Glu
 305 310 315 320

 Ser Phe Asn Val Val Ala Lys Glu Val Phe Arg Ser Ile Val Leu Asn
 325 330 335

Glu	Tyr	Lys	Arg	Cys	Asp	Gly	Arg	Asp	Leu	Thr	Ser	Leu	Arg	Asn	Val
340															350
Ser	Cys	Glu	Val	Asp	Met	Phe	Lys	Thr	Leu	His	Gly	Ser	Ala	Leu	Phe
355															365
Gln	Arg	Gly	Gln	Thr	Gln	Val	Leu	Cys	Thr	Val	Thr	Phe	Asp	Ser	Leu
370															380
Glu	Ser	Gly	Ile	Lys	Ser	Asp	Gln	Val	Ile	Thr	Ala	Ile	Asn	Gly	Ile
385															400
Lys	Asp	Lys	Asn	Phe	Met	Leu	His	Tyr	Glu	Phe	Pro	Pro	Tyr	Ala	Thr
405															415
Asn	Glu	Ile	Gly	Lys	Val	Thr	Gly	Leu	Asn	Arg	Arg	Glu	Leu	Gly	His
420															430
Gly	Ala	Leu	Ala	Glu	Lys	Ala	Leu	Tyr	Pro	Val	Ile	Pro	Arg	Asp	Phe
435															445
Pro	Phe	Thr	Ile	Arg	Val	Thr	Ser	Glu	Val	Leu	Glu	Ser	Asn	Gly	Ser
450															460
Ser	Ser	Met	Ala	Ser	Ala	Cys	Gly	Gly	Ser	Leu	Ala	Leu	Met	Asp	Ser
465															480
Gly	Val	Pro	Ile	Ser	Ser	Ala	Val	Ala	Gly	Val	Ala	Ile	Gly	Leu	Val
485															495
Thr	Lys	Thr	Asp	Pro	Glu	Lys	Gly	Glu	Ile	Glu	Asp	Tyr	Arg	Leu	Leu
500															510
Thr	Asp	Ile	Leu	Gly	Ile	Glu	Asp	Tyr	Asn	Gly	Asp	Met	Asp	Phe	Lys
515															525
Ile	Ala	Gly	Thr	Asn	Lys	Gly	Ile	Thr	Ala	Leu	Gln	Ala	Asp	Ile	Lys
530															540
Leu	Pro	Gly	Ile	Pro	Ile	Lys	Ile	Val	Met	Glu	Ala	Ile	Gln	Gln	Ala
545															560
Ser	Val	Ala	Lys	Lys	Glu	Ile	Leu	Gln	Ile	Met	Asn	Lys	Thr	Ile	Ser
565															575
Lys	Pro	Arg	Ala	Ser	Arg	Lys	Glu	Asn	Gly	Pro	Val	Val	Glu	Thr	Val
580															590

Gln Val Pro Leu Ser Lys Arg Ala Lys Phe Val Gly Pro Gly Gly Tyr
595 600 605

Asn Leu Lys Lys Leu Gln Ala Glu Thr Gly Val Thr Ile Ser Gln Val
610 615 620

Asp Glu Glu Thr Phe Ser Val Phe Ala Pro Thr Pro Ser Val Met His
625 630 635 640

Glu Ala Arg Asp Phe Ile Thr Glu Ile Cys Lys Asp Asp Gln Glu Gln
645 650 655

Gln Leu Glu Phe Gly Ala Val Tyr Thr Ala Thr Ile Thr Glu Ile Arg
660 665 670

Asp Thr Gly Val Met Val Lys Leu Tyr Pro Asn Met Thr Ala Val Leu
675 680 685

Leu His Asn Thr Gln Leu Asp Asn Glu Arg Leu Asn Ile Leu Leu Pro
690 695 700

<210> 45

<211> 245

<212> PRT

<213> B. subtilis

<400> 45

Asp Arg Leu Gly Leu Ala Ala Gly Gly Asp Thr Ala Val Thr Ala Pro
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Pro Phe Pro Leu Val Tyr Ala Gly Ile Pro Arg Glu Ser Lys Leu Ser
20 25 30

Arg Ile Asp Arg Ile Arg Pro Leu Phe Gly Gln Val Val Asp Ala Gly
35 40 45

Ser Ala Leu Ser Ser Asp Ile Gly Pro Val Gly Ile Asp Asn Pro Thr
50 55 60

Ser Asn Leu Val Val Ala Gly Lys Ile Met Glu Ala Ala Ala Ile Gly
65 70 75 80

Ile Val Gly Lys Lys Leu Phe Glu Leu Ala Glu Leu Glu Lys Glu Val
85 90 95

Glu Val Arg Ile Glu Arg Asp Gly Arg Arg Ser Glu Val His Gly Ser
100 105 110

Leu Phe Arg Gly Gln Thr Gln Leu Thr Leu Asp Lys Phe Met His Tyr
115 120 125

Phe Pro Glu Gly Gly Arg Arg Glu Gly His Gly Ala Leu Glu Ala Leu
130 135 140

Pro Val Ile Pro Asp Phe Pro Thr Arg Ser Glu Val Leu Glu Ser Asn
145 150 155 160

Gly Ser Ser Ala Ser Cys Leu Ala Met Asp Gly Val Pro Ile Val Ala
165 170 175

Gly Ala Gly Leu Val Glu Tyr Leu Thr Asp Ile Gly Glu Asp Gly Asp
180 185 190

Met Asp Phe Lys Ala Gly Thr Lys Gly Thr Ala Leu Gln Asp Ile Lys
195 200 205

Gly Ile Glu Ala Gln Gln Ala Glu Ile Leu Met Thr Ser Arg Pro Thr
210 215 220

Lys Gly Pro Gly Lys Glu Thr Gly Val Ile Thr Ser Ala Ile Gln Leu
225 230 235 240

Gly Val Lys Leu Glu
245

<210> 46

<211> 47

<212> RNA

<213> Homo sapien

<400> 46

uaauuuuuau auauuuauau uuuuaaaaaua uuuauuuauu uaauuuua

47

<210> 47

<211> 11

<212> RNA

<213> Homo sapien

<400> 47

uaauuuauuuua a

11

<210> 48
<211> 33
<212> RNA
<213> Homo sapien

<400> 48
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33

<210> 49
<211> 62
<212> RNA
<213> Homo sapien

<400> 49
guuuuuuauuu uauuuauuuaa gauggauucu cagauauuuua uauuuuuuuau uuuuauuuuuuu 60
uu 62

<210> 50
<211> 111
<212> RNA
<213> Homo sapien

<400> 50
auuuacaugu gccauuuuuu uaaauucgagu aacccaauuu uguuuuauuug uauuuuacauu 60
auaaaucagg aaauauuuau uauuaaaagu aagucauuua uacaucuuag a 111